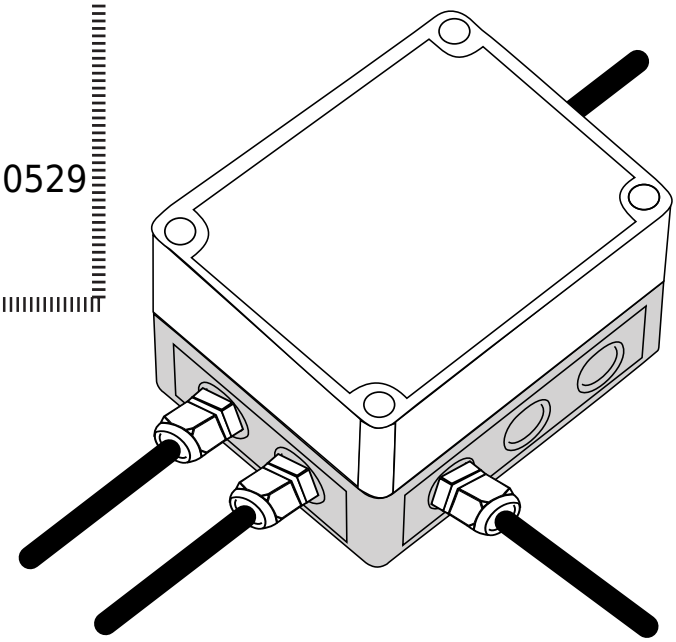
Connecting everything

Electronic equipment are known to be sensitive to moisture exposure and our sensors are no different!
Therefore, the following tutorial we have for you will show you how to properly connect all the cables within a waterproof housing. We have chosen a housing that has pre-cuts in the side walls for cable grommets.

Technical data

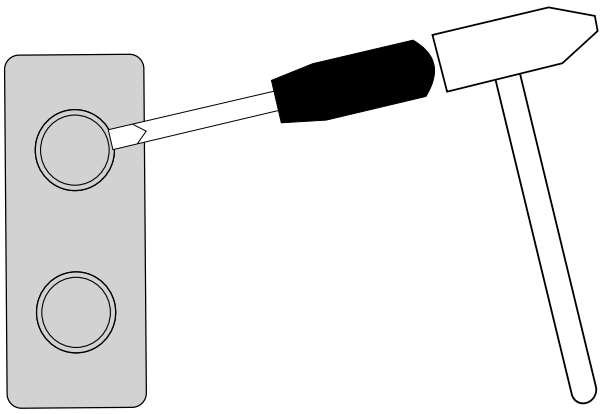
Dimensions: 130 x 94 x 81 mm
Material: polycarbonate
Protection class: IP66 - according to EN 60529
Ambient temp. (minimum): -35 °C
Ambient temp. (maximum): 80 °C



List of Materials

You will need:
1 empty housing
4 cable entry systems M16 with geared nut, metric
1 slotted screwdriver
1 hammer
The circuit board and the sensors

1 Step 1

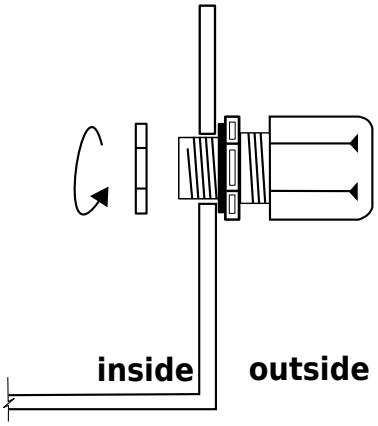


To prevent water from running along the cables and leaking into the housing, we need to install cable entry systems with a seal in the middle.
To do this, we must make holes in the housing. Fortunately, suitable holes are pre-cut and can be easily punched out using a flat-blade screwdriver and a hammer. On the sides of the housing you will see circular indentations. Hold your flat-blade screwdriver on the inner ring of one of the indentations.

Then, gently hit the top of the handle of your screwdriver with your hammer. The impact of the hammer will punch out the hole inthe wall of the housing.The housing has two longer sides and two shorter sides. We need to make two holes on oneof the short sides, one hole on one of the long sides and on hole on the opposite short side –four holes in total. Check out the picture above to get a better understanding on the positionof the holes!

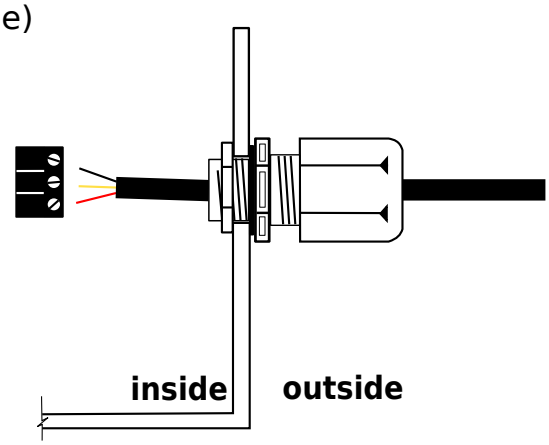
2 Step 2

The next step will be securing the cable entry systems into the holes we just punched out. The scale, temperate sensors and moisture sensors will be attached on one side, the power supply on the opposite side. Tightening the cable entry systems should be relatively easy.



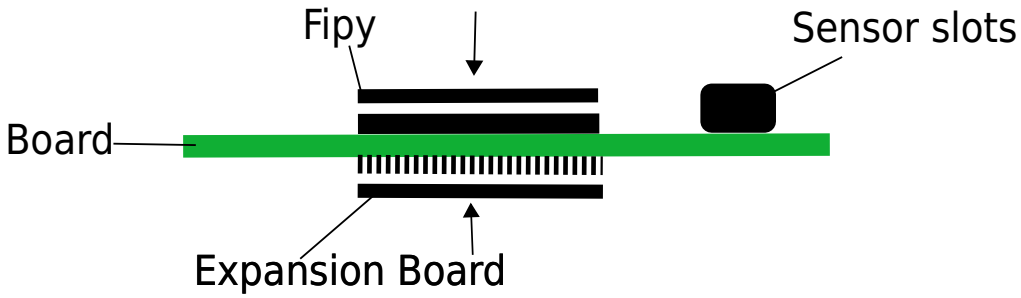
3 Step 3

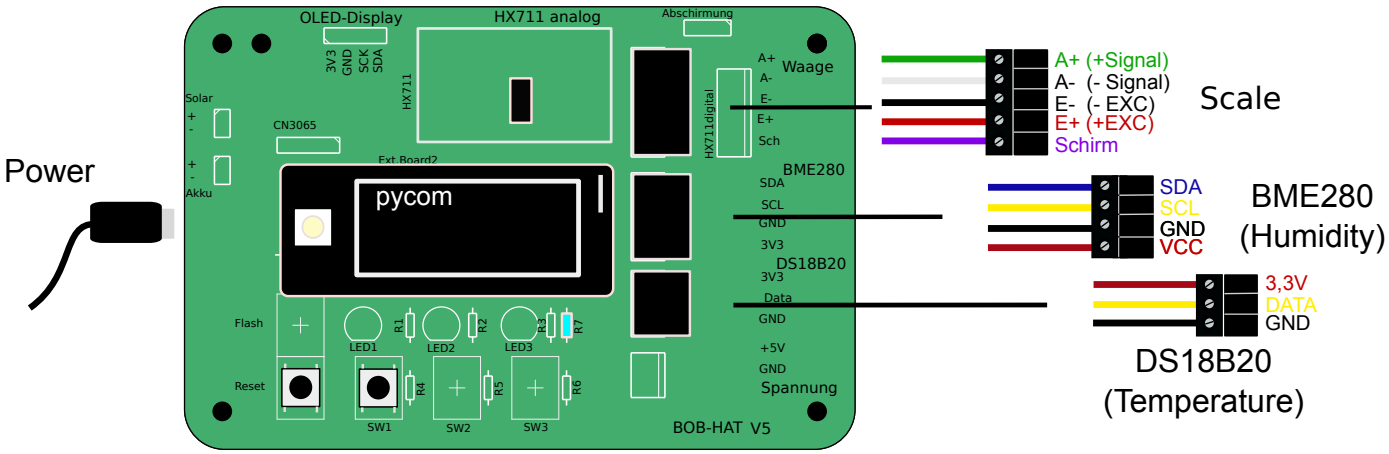
Next, you must first lead the cable through the entry before you screw the plugs to the end of the sensor cables. (Unfortunately the cable entries are build in a way where the combination of a huge plug and a thin cable doesn't function – but the workaround is easily done)



4 Step 4

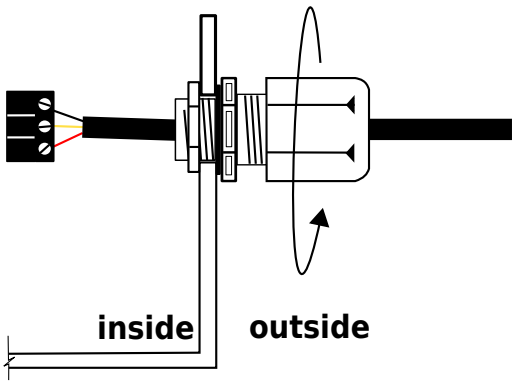
The next step is to assemble the three components of the electronic equipment like a sandwich. The green circuit board belongs in the the middle and the Fipy goes on top. Turn both so that you can read the writing. The small white LED on the Fipy should then be on the left and the sockets for the sensor cables right from the Fipy. The extension board should beplaced under the green circuit board (see picture below). Now turn your "sandwich" towardsyou so the word "pycom" is the right way around and connect the circuit board to the extension board. The USB-box should now be on your left. Now you can connect the sensors to the circuit boards. See the pictures below and on the next page.





5 Step 5

To prevent water from running along the cable into the housing, the outer cap of the entry should now be screwed on lightly. It is rounded at the front and therefore squeezes the seal against the cable. The cable is then firmly secured.



6 Step 6

As a final step, we can now screw the lid onto the housing. Four screws, four corners.